Ph.D. Physical Education

Department of Physical Education

Session – 2020

Programme Learning Outcome

The Ph. D. Programme focuses on knowledge of the literature and a comprehensive understanding of scientific methods and research techniques to demonstrate originality in critical evaluation and application of research.

COURSE STRUCTURE AND SYLLABUS
Ph.D. Course Work in Physical Education

Course Code	Course Title	Course Type	L	T	P	Credits
PPE701	Research Methodology in Physical Education	Core Course	4	0	0	4
PPE702	Statistical Methods and Computer Application	Core Course	4	0	0	4
PPE751	Research and Publication Ethics	Core Course	2	0	0	2
PPE703	Real Data Analysis	Skill Based Practical	0	0	2	1
PP711	Community Research Project	Skill Based Practical	0	0	0	2
Elective Courses: Choose any one Courses						
PPE704	Research Based Exercise Physiology	Core Course	3	0	0	3
PPE705	Research Based Sports Psychology					
PPE706	Research Based Sports Biomechanics					
PPE707	Research Based Sports Management					
PPE708	Research Based Sports Medicine					
PPE709	Research Based Sports Training					
PPE710	Research Based Yogic Science					
Total			**13**		**2**	**16**

Course Code: PPE701
Course Title: Research Methodology in Physical Education

L	T	P	Credits
4	0	0	4

Learning Outcomes

After completion of the course the students will be able to

- Understand different approaches to research
- Review the related literature
- Develop a research proposal
- Select an appropriate sampling design for a research study
- Construct tools for different types of research
- Document and disseminate research findings in physical education
- Explain the significance of intellectual property rights in the field of research

Unit-1

Introduction to Research

1. Basic concept of Research and its scope in physical education
2. Types/Classification of Researches

Review of Literature

1. Importance, location of the research material – index, books, bibliography, reviews and abstract, critical and allied literature
2. Steps in reviewing literature and critically writing of review of literature

Selection of Research Problem

1. Identification of area for research in Physical Education
2. Selection of problem & variables, writing of title and objectives, Hypothesis and its form, limitation and delimitation of research problem, rationale of research study

UNIT-2

Methods of Research

1. Analytical Research- Philosophical, Historical and Meta-Analyses
2. Descriptive Research –Case Study and Survey (Cross-sectional, Longitudinal and Correlational)
3. Qualitative and Quantitative Research
4. Experimental Designs: Pre-experimental Designs, True Experimental Designs and Quasi Experimental Designs

UNIT-3

Sampling and Tools in Research

1. Sampling: Population, Sample, Frame, Probability and Non- Probability Sampling Techniques, Sample size and sampling error
2. Characteristics of a good research tools
3. Types of tools for data collection – standardised and non-standardised
4. Questionnaire, Interview, Observation, Psychological Test, Sociometric Techniques, Scales, and Inventories
5. Procedure of development and standardization of tools
6. Methods for establishing reliability and validity

7. Primary and secondary sources for data collection

UNIT-4

Academic Writing

1. Different formats for reference and bibliography- APA, MLA, Chicago and Harvard
2. Silent features of writing research proposal/report - Language & style, Precision, Consistency, Continuity, Use of third person, Use of tense, Use of headings, Table, Graph and Front page of thesis
3. Research Proposal Writing
4. Method of writing research papers for seminars and publication in journals
5. Introduction to Poster Presentation
6. Writing of research dissertation and thesis
7. Writing of research Project

Suggested Reading:

1. Anderson, J. (2001): Thesis and Assignment writing, 4th ed., Wiley, USA
2. Babbie, E. R. (2007). *The Basics of Social Research* (4th Ed.). Australia: Thomson/Wadsworth
3. Berg, Bruce L. (2008). *Qualitative Research Methods for the Social Sciences*. 7th ed. Boston, MA: Allyn & Bacon. 336p.
4. Bhaumik, S.K (2007), 'Methodological Issues in Field Surveys' in K K Bagchi (ed.).
5. Bryman, Alan (2004), Social Research Methods, Oxford University Press, Oxford, 2nd edition.
6. David H. Clarke and H.Harriosn Clarke (1984). Research Process in Physical Education. Prentice Hall Inc. Englewood Cliffs Publisher, New Jersey.
7. De Marrais, Kathleen B. and Stephen D. Lapan. (2004). *Foundations for Research: Methods of Inquiry in Education and the Social Sciences.* Mahwah, NJ: L. Erlbaum Associates. 432p
8. Dooley, David. (2001). *Social Research Methods*. 4th ed. Upper Saddle River, NJ: Prentice Hall. 385p.
9. Fink, Arlene and Kosecoff, J. (1998), How to Conduct Surveys - A Step by Step Guide, Sage, UK.
10. Glicken, Morley D. (2002). *Social Research: A Simple Guide*. Boston, MA: Allyn and Bacon. 282 p.
11. Gray, David E. (2004). *Doing Research in the Real World*. London, UK: Sage Publications. 422p.
12. John W. Best (1981). Research in Education. Prentice Hall Inc. Englewood Cliffs Publisher, New Jersey, USA.
13. Kemple, Mary. (2000). Review of the Good Research Guide for Small-Scale Social Research Projects, by Martyn Denscombe. *Journal of Advanced Nursing* 31:733.
14. Kou, Lokesh (1988), Methodology of Research, Vikas, New Delhi.
15. Miller, Delbert C., and Neil J. Salkind. (2002). *Handbook of Research Design and Social Measurement*. 6th ed. Thousand Oaks, CA: Sage Publications. XXII, 786p.
16. Mouly, A.J. (1963), The Science of Educational Research Eurosia, New Delhi
17. Neuman, W. Lawrence. (2006). *Social Research Methods: Qualitative and Quantitative Approaches*. 6th ed. Boston, MA: Allyn & Bacon. 592p.
18. Outhwaite, W., & Turner, S. P. (2007). *The SAGE Handbook of Social Science Methodology*. Los Angeles (Calif.); London: SAGE. 640 pages.

19. Sansanwal DN (2020). Research Methodology and Applied Statistics. Shipra Publisher, Delhi, India
20. Seale, Clive (2004): Social Research Methods: A Reader, London: Routledge
21. Somekh, B. and Lewin, C. (2012): *Theory and Methods in Social Research*, 2nd ed., Sage Publications
22. Todd, Roy. (1999). Review of the Good Research Guide for Small-Scale Social Research Projects, by Martyn Denscombe. *Sociology -The Journal of the British Sociological Association* 33:839. Good: C.V. and Douglas, E.Scates 1954, Methods in Social Research, Mcgraw Hill, New York.

L	T	P	Credit
4	0	0	4

Course Code: PPE702
Course Name: Statistical Methods and Computer Application
Learning Outcomes
After completion of the course the students will be able to

- Understand different Measuring Scale of Data
- Understand application of different data Analysis Software
- Learn data analysis with multiple correlation and regression techniques
- Able to analyze and present data with multivariate techniques.

UNIT-1
Computer Application

1. Using MS Word for typing, formatting, editing, reviewing, and preparing references/bibliography
2. Using MS Power Point for preparing academic presentations
3. Using MS Excel for data processing and analysis
4. Using SPSS, R (R Foundation for Statistical Computing), MATLAB, MINITAB, and STATA for data processing and analysis
5. Google form for data collection, Padlet, Google Drive, Reference Manager

UNIT-2
Nature of Data, Hypothesis Testing and Design of Experiments

1. Testing normally Shapiro Wilk and Kolmogorov Smirnov test, Q-Q plot and Box plots for identifying outliers, Developing profiles, Concept in hypothesis testing: Type I and II error, Power of the test, Sample size determination.
2. Principles of Design of Experiment: Randomization, Replication and Blocking, Terminologies in Design of Experiment: Subject, Experimental unit, Treatment: Criterion Variable, Factors: Variation and Variance, Experimental error, Understanding Variance and Sum of squares
3. Considerations in designing an experiment: Systematic Variance, Extraneous Variance: Randomization Method, Elimination Method, Matching Group method, Adding Additional Independent Variable, Statistical control, Error Variance

4. Completely Randomized Design (CRD): Partitioning of Variation in the Design, Layout design, Solving design with one-way ANOVA, Assumptions
5. Randomized Block Design (RBD): Partitioning of Variation in the Design, Layout design. Solving design with two-way ANOVA, assumptions, Advantage over DCRD
6. Post-hoc analysis Test: LSD, Scheffe's, Tukey- HSD and Sidak., Correction for Inflating Type I error due to multiple comparisons. Effects size

Unit - 3

Correlation and Regression Analysis

1. Correlation- Partial and multiple, limitations, Testing of significance
2. Regression Analysis- Simple and multiple regressions. Estimating intercept and slope. Least square methods, analyzing residuals, Residual Plot: Testing assumptions in the regression model Standard error of estimate, Testing significance of slope and model, Coefficient of Determination (R^2)
3. The Multiple Regression Model- Developing a Multiple Regression Model, Standardized regression coefficients. Different ways of testing a regression model, Testing the significance of overall model and regression coefficient's. Analyzing residuals, standard Error of the Estimate, The coefficient of determination (R^2). Adjusted R^2, Testing the significant of R2. Different approaches in developing multiple regression model: Stepwise, Forward, Backward and Enter
4. Discriminant Model: Terminologies discrimination function, classification matrix, procedure in discrimination analysis, power of the variables, Box M test, Eigen value, wilks' Lambda application of discrimination analysis, SPSS commands.

Unit - 4

Introduction to Statistical Design and Multivariate analysis

1. Factorial Experiment: Advantages of factorial design, planning a factorial experiment in physical education, Layout design, testing assumptions of design, Analyzing factorial design
2. Main and simple effects, Interaction analysis and Means plots
3. Analysis of Covariance: Concept of Analysis of Covariance, ANCOVA model, Hypothesis tested. Application of ANCOVA in sports research. Statistical test used, Preparation of data file, Defining variables for the data in table. Output generated in the analysis and its interpretation.
4. Classification of Multivariate Techniques: Techniques for understanding dependency and Interdependence. Techniques for understanding structural modeling.
5. Overview of different multivariate techniques: Factor analysis (Exploratory and Confirmatory.), Logistic Regression. Cluster analysis and Path analysis, Canonical correlation, Multivariate Analysis of Variance (MANOVA) model, Correspondence analysis, Conjoint Analysis and Multidimensional Scaling

Suggested Reading:

1. Garrett, H.E. (1973), Statistics in Psychology and Education Vakils, Feffer and Simon, Bombay.
2. Sansanwal DN (2020). Research Methodology and Applied Statistics. Shipra Publisher, Delhi, India
3. Verma J.P. (2012). Data Analysis in Management With Spss Software. Springer Science & Business Media.

4. Verma J.P. (2012). Statistics for Psychology. Tata McGraw Hill Education Private Limited.
5. Verma J.P. (2014). Statistics for Exercise science and health with Microsoft excel. John Wilkey& sons, USA.
6. Verma J.P. (2015). Repeated Measures Design for Empirical Researchers. John Wilkey& sons, USA.
7. Verma J.P. (2019). Statistics and Research Methods in Psychology with Excel. Springer Nature Singapore Pte Ltd.

Course Code: PPE751
Course Name: Research and Publication Ethics

L	T	P	Credit
2	0	0	2

Learning Outcomes

After completion of the course the students will be able to

- Understand concept of philosophy and ethics in research
- Develop understanding about academic cheating
- Develop understanding about publication ethics
- Understanding about online publication
- Understanding about Indexing and Citation Databases

Unit- 1

Philosophy & Ethics

Introduction to Philosophy: Definition, Nature & Scope, Concept, Branches. Ethics: Definition, Moral Philosophy, Nature of Moral Judgements & Reactions

Unit- 2

Scientific Conduct

Ethics with regard to science & Research, Intellectual Honesty & Research Integrity, Scientific Misconducts : Falsification, Fabrication & Plagiarism (FFP), Redundant Publications, Duplicate & Overlapping Publications, Salami Slicing, Selective Reporting & Misrepresentation of Data

Unit-3

Publication Ethics & Open Access Publishing

Publication Ethics: Definition, Introduction& Importance, Best Practices/Standards Setting Initiatives &Guidelines: COPE, WAME etc. Conflicts of Interest, Publication Misconduct: Definition, Concept, Problems that lead to unethical behaviour & vice versa, types. Violation of Publication Ethics, Authorship & Contributorship, Identification of Publication Misconduct, Complaints & Appeals, Predatory Publishers & Journals, Open Access Publications & Initiatives, SHERPA/ROMEO Online Resource to check publisher copyright &self-archiving policies. Software tools to identify predatory publications developed by SPPU, Journal Finder/Journal Suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester etc.

Unit-4

Publication Misconduct & Research Metrics

Subject Specific Ethical Issues, FFP, Authorship, Conflicts of Interest, Complaints & Appeals: Examples and Fraud from India & Abroad, Indexing Databases, Citation Databases:

Web of Science, Scopus etc., Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score. Metrics: h-index, g index, i10 index, altmetrics.

Suggested Reading

1. Loue Sana (2019), Text book of Research Ethics: Theory & Practice, Springer.
2. Bryman & Bell (2018), Business Research Methods, Oxford.
3. Tina Miller, Maxine Birch, Melanie Mauthner & Julie Jessop (2012). Ethics in Qualitative Research; Sage Publication.
4. Julie Scott-Jones (2015). Research Ethics, Context and Practice; Sage Publication.
5. David B. Resnik (2018). The Ethics of Research with Human Subjects: Protecting People, Advancing Science, Promoting Trust; Springer Publication.

Course code- PPE703
Course: Real Data Analysis

L	T	P	Credit
0	0	2	1

Research scholar will attend Labs Practical of all subjects to improve the understanding of various laboratory instruments and sports specific test to develop problem-solving skills and to nurture professional attitudes. In addition, laboratory classes can provide a method of practical learning that is different from listening, reading, or watching. This is important for all students, even if they are not ultimately to be professional sportsmen, since different students learn in different ways, and since variety in teaching methodology tends to be stimulating. The general aim for practical classes is to enhance students' understanding of methods of scientific enquiry. During their practical classes students will:

- Learn how to use scientific sports equipment.
- Develop their technical, observational and motor skills.
- Improving skills in collecting, analysing, interpreting and presenting findings and data
- Practising a wide range of personal and transferable skills such as problem solving, team working, observing and following protocols
- Learning how to new sports equipments can help athletes to improve their performance
- Learning how different phases of skill can be analyzed

Course code- PPE711
Course: Community Research Project

L	T	P	Credit
0	0	0	2

The students will select an area of their choice with the direction of their supervisor within first two weeks from the start of the semester. They will write a theme paper selecting few variables related to sports science centred community based research. There will be two presentations on the theme selected.

First presentation will be held during 6-7 week of the semester. Two examiners from the department will evaluate it on the following criteria.

- Content
- Significance of the area
- Gap of Knowledge
- Presentation

- Response to questions asked by examiners
- Conducting Action Research
- Writing of Research Articles
- Writing of References

Presentation will be of 30-45 min. duration. First evaluation will consist of 20 marks. Second presentation will be held during 12-13 weeks of the semester and will consist of 30 Marks. The criteria of evaluation and duration of presentation will be same as mentioned above.

Elective Courses (Part II)

Course code- PPE704
Subject: Research Based Exercise Physiology

L	T	P	Credit
3	0	0	3

Learning Outcomes
After completion of the course the students will be able to

- Understand the physiological effects of exercise on different system or/and on the body as a whole.
- Understand bioenergetics & role of energy systems in sports activities.
- Understand the role of nutrition & its relevance in energy production.
- Understand the importance of exercise physiology in research
- Understand the physiological basis of athletic performance and it's measurement

Unit 1: Introduction to Exercise Physiology

1. New Trends in Exercise Physiology
2. Effect of Exercise on Different Systems.
3. Transportation of CO2 in system circulation pulmonary circulation
4. Bohr's effect and Chloride exchange shift
5. Haldane Effect, Regulation of A-aDO2 and PaO2 during exchange

Unit 2: Essentials and Energy for Movement

1. Energy System and its impact on exercises, Measurement of energy cost of physical activity
2. Hormonal Regulation of Exercise, Muscular and Neurological Control of Movement
3. Cardiovascular Control and Respiratory Regulation during Exercise
4. Sources of Energy System
5. Metabolism of Carbohydrate and Fat
6. Concept of glut-4, Regulation of glycolysis and Electron transport chain

Unit 3: Environmental Influences Optimizing Performance in Sport and Neuromuscular Aspects of Physical Activity

1. Thermal Regulation and Exercise Quantifying Sport Training Exercise Hypobaric, Hyperbaric and Microgravity Environments
2. Nutrition and Nutritional Ergogenics, Optimal Body Weight for Performance
3. Physical Activity for Health and Fitness, Effect of Altitude on Performance
4. Bioelectric potential - Action potential & Graded Potential
5. Neuromuscular Junction and Neuromuscular fatigue
6. EMG and it's applications in exercise science

Unit 4: Research Reviews Related to

1. Effect of Different Training Program on Different Systems.
2. Effect of Altitude Training on Performance
3. Effect of Environmental Training on Performance
4. Effect of Ergogenic Aids on Different Systems

Suggested Readings:

1. Mathew, D. K. and Fox, E. L. (1976). Physiology basis of Physical Education and athletics. Philadelphia: UBS company
2. Pearce Evelyn. (1992). Anatomy and physiology for nurses, Calcutta: Oxford university press.
3. Sedey, Rod R. (1992). Anatomy and physiology. St. Louis: Mosby.
4. Tortora G. J. (1996). Introduction to Human Body. (4th Ed.)California: Addison Weslay.
5. Marief Eclaine N. (1984). Human Anatomy and physiology (3rd Ed.). Cal: The Benjamin Cumming.
6. Clarke, H. David Exercise Physiology.
7. William D. Mcardle, Frank I. Katch, and Victor L. Katch Exercise physiology.
8. Koley, Shyamal Exercise Physiology.
9. Frank J. Corny and Harold .W. Burlon. Exercise physiology for health.
10. Winter, E.M., Jones, A.M., Davison, R.C.R., Bromley, P.D. and Mercer, T.H. (2007). Sport And Exercise Physiology Testing Guidelines. The British Association of Sport and Exercise Sciences Guide Volume II: Exercise and Clinical Testing.
11. Eston, R. and Reilly, T. (2001). Physiology Laboratory Manual Second Edition Volume 2: Exercise Physiology Tests, Procedures and Data.
12. Tanner, R. K. and Gore, C.J. (2013). Physiological tests for elite athletes. Australian Institute of Sport.2nd ed.

Course code- PPE705
Subject: Research Based Sports Psychology

L	T	P	Credit
3	0	0	3

Learning Outcomes

After completion of the course the students will be able to

- Get acquainted with the meaning, nature and scope of sports Psychology.
- Know & prepare psychological profiles of sportsmen.
- Understand the role of sports psychology in the performance.
- Know the various psychological problems and its coping techniques for better sports performance.
- Introduce the role of leaders, counsellors, and social psyche in the performance enhancement.
- Introduce the Psychological Tests and be able to conduct these tests on subjects.

Unit 1: Introduction

1. Meaning, scope & importance of sport psychology
2. Relationship of sport psychology with other sport sciences
3. Psychological Profiling of Sportsmen/Athletes
4. Self-regulation, Bio-feedback, Self Confidence and Self efficacy

5. Coping with stress and anxiety, Preparing athlete for major competition
6. Goal setting and Sports Performance

Unit 2: Personality, Learning & Motivation

1. Personality traits of Sportsmen and Theories of Personality
2. Anxiety – Types, Theories and Effect of Anxiety on performance
3. Effects of Spectators, society, family, etc. on sports performance
4. Personality Test: 16 PF, EPQ. Motivation: Athletic Motivation Scale
5. Learning & Learning Theories
6. Motivation – Types, Theories & Techniques of motivation, Psychological Tests: Motivation, Personality, Anxiety, Aptitude, Intelligence, etc.

Unit 3: Psychological Skills Training

1. PST and Sports Performance, Designing and Implementing PST Programme.
2. Common problems in Implementing PST Programme.
3. Importance of Psychological Skill Training Programme.
4. Imagery, Types of Imagery , VMBR, PMR, Autogenic Training, Deep Breathing, Guided Imagery
5. Cognitive Technique for Building Confidence
6. Concentration and Attention Control Training, Intervention strategies for activation techniques.

Unit 4: Research Reviews Related to

1. Psychological Profiling of Sportsmen
2. Anxiety, Personality and Motivation
3. Psychological/Mental skill Training
4. Autogenic and VMBR Training
5. Improvement of Sports Performance

Suggested Readings:

1. B. J. Cratty. Psychology of Contemporary sports Champaign: Human Kinetics Publishers,
2. John M. Silva & Roberts. Psychological Foundations of Sport. Champaign: Human Kinetics Publishers.
3. Diane Gills, Psychological Dynamics of sports. Champaign: Human Kinetics Publishers.
4. Cox, Sports Psychology. Champaign: Human Kinetics Publishers.
5. Richard M. Sumin, "Psychology in Sports, Methods & Application. New Delhi: Surjeet Publication.
6. But, Lusan Dorcas, Psychology of Sports. Network: Van Nostrand Reinhold Company
7. Cratty, Bryant. J. (1973). Movement Behavior and Motor Learning. Philadelphia: Lea and Febiger.
8. Kamlesh M. L. Psychology of Physical Education and sports (London, Boston Rutledge and Kegan Paul.
9. Linda K. Binket, Robert J. Ratella and Ann/, S. (1972). Really Sports, Psychology, Psychological Consideration Maximizing Sports Performance. Dubugne Jowa: C. Brown Publishers.

Course Code- PPE706
Subject: Research Based Sports Biomechanics

L	T	P	Credit
3	0	0	3

Learning Outcomes:
After completion of the course the students will be able to

- ❖ Understand the science of Biomechanics and kinesiology in relation to human performance.
- ❖ Analyze various fundamental movements and understanding the relevance of analysis.
- ❖ Understand the body structure and apply the knowledge in analysis of movements.
- ❖ Apply the knowledge of biomechanics for the purpose of research.

Unit 1: Introduction and Trends in Biomechanics

1. Current Trends and Importance of Biomechanics.
2. Description of Human movement.
3. Classification of force systems:
    a. Linear force system,
    b. Parallel force system,
    c. Concurrent force system,
    d. General force system,
    e. Composition and resolution of force.

Unit 2: Analysis of Techniques with modern equipments

1. Methods of analysis of sports skills:
    a. Qualitative Methods
    b. Quantitative Method
2. Methods of investigation:
    a. Photo instrumentation: Camera, Films, Exposure Meters, Calibration of Camera Speed, Filming Fundamentals, Films Analysis, Fundamentals of film analysis.
3. Others methods of investigation:
    a. Goniometry
    b. Accelerometers
    c. Dynamometry
    d. Electro-myography
4. Location of Center of Gravity – Segmentation method.

Unit 3:Analysis of Techniques of Sports Movement

1. Analysis of static positions of the body
    a. Sitting
    b. Standing
    c. Lying
2. Analysis of Locomotion.
    a. Walking
    b. Running
    c. Jumping
    d. Hopping or Leaping
3. Basic steps of Analysis Sport Technique
    a. Development of Model
    b. Observation

c. Identification of Faults
d. Evaluation of Faults
e. Instruction to the Performer

4. Analysis of Techniques of Track and Field Event
    a. Sprinting Event
    b. Jumping Event
    c. Throwing Event
5. Analysis of Techniques of other Sport Event
    a. Basketball : Lay-up Shot
    b. Volleyball : Spiking & Blocking
    c. Football : Kicking & Throwing
    d. Gymnastics : Forward and Backward Somersault
    e. Swimming : Front Crawl and Back Crawl
    f. Cricket : Drive

Unit 4: Research Reviews Related to

1. Analysis of Techniques and Skills
2. Analysing Methods in Sports
3. Sports Equipment's and Surfaces
4. Video graphic analysis in sports

Suggested Readings:

1. Hay, J (1981). The Biomechanics of sports techniques. New Jersy: Prentice Hall.
2. Bunn, J. W. (1981). Scientific principles of coaching. Englewood: Cliffs. Prentice Hall.
3. McGinnis, P. M. (2005).Biomechanics of sports exercises. USA: Human Kinetics.
4. Sunderrajan, G.S. Biomechanics of sports and games. Ludhiana: Tondon Publication.
5. Susan, J. H (2003). Basic Biomechanics. (4th Edn.) Mc.Graw Hill Publication.
6. Raj Lakshmi, D. (2007). Biomechanics for sports and games. Sports Educational Technologies.
7. Hoffman, S.J. (2005). Introduction to Kinesiology. Human Kinesiology Publication.
8. Uppal. A. K. and Lawrence, M. P. Kinesiology. New Delhi. Friends Publication: India.

Course Code- PPE707
Subject: Research Based Sports Management

L	T	P	Credit
3	0	0	3

Learning Outcomes:

After completion of the course the students will be able to

- ❖ Understand the scope and importance if management in Phy. Edn.
- ❖ Know the concept & principles of management in physical education.
- ❖ Manage the programme of competitions, intramurals the basic level of competitions.
- ❖ Understand budget management, school programme of physical education and sports.

Unit 1: New trends in Management

1. Modern concept of sport Management
2. Process of sport Management
3. Structure of sport Management
4. New trends in sport Management
5. Elements of Leadership
6. Forms of Leadership

Unit 2: Management and Organisation

1. Scope and Importance of Management
2. Principles of Management
3. Major faction of Management
4. Formal and informal Organization
5. Planning and Controlling a School or College Sports programme

Unit: 3 Various Managements in P.E. & Change Process, Marketing, Sponsorship and Media for Competitive Sport

1. Facility, Fiscal, Equipment and office Management
2. Meaning & importance of change process and Factor Associated with Successful Change
3. Concept of Marketing and Factors Affecting Marketing programme
4. Principles of marketing in physical education and sports
5. Concept of sponsorship, Expectations & Responsibilities
6. Concept of media, Role & responsibility of media in sports

Unit 4: Research Reviews Related to

1. Facilities in Physical Education & sports
2. Sports competition
3. Spots marketing
4. Physical Education program
5. Media impact on sports

Suggested Learning:

1. Bucher, C. A.& Krotee, M. L. (2002). Management of Physical Education of Sports, (12th Edn.). New Yark: McGraw Hill.
2. Voltmer, E.F. (1979).The organization and administration of Physical Education (5th Edn). New Jersy: Prentice Hall.
3. Parkhouse, B. L. (1991). The Management of Sports Foundation & Application St. Loup: Mosby Year Book.
4. Kamlesh, M. L. (2000). Management Concepts in Physical Education & Sports, New Delhi: Metropolitan Book Co. Pvt. Ltd.

Course Code- PPE708
Subject: Research Based Sports Medicine
Learning Outcomes:

L	T	P	Credit
3	0	0	3

After completion of the course the students will be able to

- ❖ Recognize the scientific sports Medicine process & principles
- ❖ Develop attitudes and skills in designing sports training programs
- ❖ Understand moralities of sports medicine
- ❖ Develop and implement sports medicine and rehabilitation programme to various sports and games athletes.

UNIT – 1 Introduction of Sports Medicine

1. Sports Medicine – definition – meaning, preventive – curative methods
2. Rehabilitation aspects –physical examination.
3. Types of sports injuries – general principles of injury management
4. Management of soft-tissue injuries, hard tissue injuries, nerve injuries.

UNIT – 2 Sports Injuries Management

1. Regional Athletic injuries and management – Upper extremities and Lower Extremities
2. Evaluation and management of specific disorders – traumatic lesions of the spinal cord, after care of fracture
3. Treatment of back disorders, and deformities – low back pain and scoliosis.

UNIT – 3 Application of Therapeutic Modalities

1. Applied sports medicine: Role of exercise in the prevention of various injuries and disorders:
2. Therapeutic modalities and procedure - principles of therapeutic modalities and procedures
3. Hydrotherapy - Diathermy -ultrasound- electrical muscle stimulation – transculanor electrical nerve stimulation (TENS) cry kinetic,

UNIT -4 Rehabilitation Programs

1. Cold compress and therapeutic exercises, cold spray – paraffin bath, ultraviolet-therapeutic exercises and massage.
2. Meaning and definition of physical rehabilitation. Rehabilitation – goal of rehabilitation
3. Rehabilitation programme – types of exercises – isometric – isotonic – isokinetic
4. Manual resistance – proprioceptive neuromuscular facilitation programme for Sports injuries.

Suggested Readings:

1. Edward L. For, Donald K. Mathews: The Physiological basis of Physical Education and Athletic, Baundura college Publishing
2. Anthony P. Millar, sports Injuries and their Management, Willaims&Witkins and Associates Pvt. Limited,Australia.
3. KrusenKottke, Ellwood, Physical Medicine and Rehabiliation, W.B. Saunders company, Philadelhia, London, Tornota.

4. James, A. Gould & George J. Davies. (1985). Physical Physical Therapy. Toronto: C.V. Mosby Company.
5. Richards Schredier John C Kennnedy Marcus L Plant, Sports Injuries Mechanism, Prevention and Treatment, Williams & Wilkins, Baltiomore, London, Losangele: Sydney.
6. Rohert N. Swinger: Motor learning and human performance, the Macmillian Co., New York.
7. MiroslavVanke and Bryant'JCratty: Psychology and the Athlete, Macmillan Co.,London.
8. Christopher M. Norris. (1993). Sports Injures Diagnosis and Management for Physiotherapists. East Kilbride: Thomson Litho Ltd.
9. Morris B. Million (1984) Sports Injuries and Athletic Problem. New Delhi: Surjeet Publication.
10. Pande. (1998). Sports Medicine. New delhi: Khel Shitya Kendra
11. The Encyclopedia of Sports Medicine. (1998). The Olympic Book of Sports Medicine, Australia: Tittel Blackwell Scientific publications.

Course Code- PPE709
Subject: Research Based Sports Training

L	T	P	Credit
3	0	0	3

Learning Outcomes:
After completion of the course the students will be able to

- Understand the scientific sports training process & principles
- Develop attitudes and skills in designing sports training programs
- Understand principles of sports training
- Develop and implement sports training programme to various sports and games

Unit 1: Introduction and Trends in Sports Training

1. Meaning, Importance and Scope of Sports Training
2. Current Trends in Sports Training
3. Relationship between Volume and Intensity
4. Density and Complexity
5. Supercompensation Cycle and Anatomical Adaptation
6. Talent Identification

Unit 2: Training Methods

1. Principles of Sports Training
2. Load, Adaptation, Recovery Interventions and Modalities
3. Sports Fitness Training Methods
4. Multilateral Development Versus Specialization
5. Development of the Training Model
6. Periodization of Biomotor Abilities

Unit 3: Training Program

1. Concept of Peaking and Taper
2. Long Term and Short Term Training Plans
3. Technique, Skill, and Psychological Training
4. Design Training Program
5. Evaluation of Training Program

Unit 4: Research Reviews Related to

1. Training Methods
2. Biomotor abilities
3. Training Program and Plans
4. Training Duration

Suggested Readings:

1. Singh, H. (1991). Science of sports training. New Delhi: DVS publication
2. Rainer Martens (2005). Successful coaching
3. Beachel & Taylor (2006). Essentials of strength training & conditioning
4. Beotra Alka, (2000), Drug education handbook on drug abuse in sports. Delhi: Sports Authority of India.
5. Bunn, J.N. (1998). Scientific principles of coaching, New Jersey Engle Wood Cliffs, Prentice Hall Inc.
6. Cart, E. & Daniel, D (1999) Modern principles of athletic training, St. Louis C. V. Mosphy Company
7. Daniel, D (1991) Principles of athletic training, St. Luis, Mosby Year Book
8. David R (1996) Drugs in sport, School of Pharmacy, Liverpool: John Moore University
9. Gary, T. Moran (1997) – Cross training for sports, Canada: Human Kinetics
10. Jensen, C.R. & Fisher A.G. (2000). Scientific basic of athletic conditioning, Philadelphia
11. Ronald, P (1998) Concepts of athletics training, 2nd Edition, London: Jones and Bartlett Publications
12. Yograj Thani (2003), Sports training, Delhi: Sports Publications

Course Code - PPE710

Subject: Research Based Yogic Science

Learning Outcomes:

L	T	P	Credit
3	0	0	3

After completion of the course the students will be able to

- ❖ Understand the importance of yoga
- ❖ Know about famous yogis and their contribution in yoga
- ❖ Clear misconception about yoga in modern society
- ❖ Practice different types of yoga
- ❖ Understand the use of yoga as a therapeutic intervention for the common ailments
- ❖ Mechanical analysis of skills in yoga

Unit – 1 Introduction of Yoga

1. Meta Analysis of various scriptures and schools of Yoga
2. Famous yogis and their contribution in Yoga
3. Concept of Pancha Mahabhuta, Panch Kosh, Panch Prana, Chakras and Aura in Yoga
4. Concept of Triguna And Tridosha in Yoga

Unit – 2 Yogic Diet and Practice of Yoga in Modern Society

1. Practice of Yogic lifestyle (Ahara, Vihar, Achar and Vichar)
2. Diet according to the body constitution (Prakriti) – Vata, Pitta and Kapha
3. Philosophy of the sacred symbol “Om” (AUM)
4. Misconception about yoga in modern society

Unit – 3 Yogic Practices as Therapeutic Intervention

1. Yogic Practices; Techniques, Precautions and Benefits
    i. Shatkarma
    ii. Asanas
    iii. Pranayama
    iv. Mudras & Bandas
    v. Meditation
2. Yoga as a Therapeutic Intervention for the following Common Ailments:
    i. Cellular Purification
    ii. Respiratory disorders
    iii. Cardiovascular disorders
    iv. Endocrinal and Metabolic Disorder
    v. Obstetrics and Gynaecological Disorders, Menstrual disorders
    vi. Gastrointestinal disorders
    vii. Musculo-Skeletal disorders
    viii. Neurological disorders
    ix. Psychiatric disorders
3. Fasting / Intermittent Fasting for Mental and Physical Transcendence
4. Effect of Yoga on Physical, Cognitive and Emotional Development
5. Naturopathy and Yoga Intervention for wellness

Unit – 4 Advanced Practices in Yoga

1. Requisite of professional yoga practitioner (Physical, Technical & Psychological).
2. Teaching/ Training in Yoga: Means & methods, basic teaching aids and Advanced training gadgets
3. Mechanical Analysis of Skills in Yoga

Suggested Readings:

1. Tarak Nath Pramanik (2018). Yoga Educatiosn, Sports Publication New Delhi
2. Swami Vivekananda (2019). The Complete Book of Yoga : Karma Yoga, Bhakti Yoga, Raja Yoga, Jnana Yoga, Fingerprint! Publishing.
3. Sadhguru (2017). Adiyogi: The Source of Yoga, HarperCollins Publishers, India.
4. Sadhguru (2017). Inner Engineering: A Yogi's Guide to Joy, Penguin Random House India.
5. MC Gill (2016). Low Back Disorders, Human Kinetics.
6. Swami Satyananda Saraswati (2013). Asana Pranayama Mudra Bandha, Bihar School Of Yoga.
7. B.K.S. Iyengar (2012). Light on the Yoga Sutras of Patanjali, HarperCollins Publishers, India.
8. Leslie Kaminoff & Amy Matthews(2011). Yoga Anatomy. Human Kinetics.
9. Muktibodhananda Swami (1998). Hatha Yoga Pradipika, Bihar School of Yoga
10. Anatharaman, T.N., (1996), "Ancient Yoga and Modern Science", Project of History of Indian Sciences Philosophy & Culture,-ISBN 8121507529
11. Sturgess, Stephen, (1996), "The Yoga Book", Watkins Publications, London, University of Michigan
12. Kumar, Dr. Kamakhya, (2008), "Super Science of Yoga", Standard Publications, New Delhi ISBN-8187471409
13. Jha, Gangadhar, (1894), "Yoga Sara Samgraha" –Bombay Theosophical Fund, Tatva Vivechaka Press, Bombay